IN THE SPECIFICATION:

Page 1, please amend the paragraph beginning at line 7 as follows:

The semiconductor manufacturing apparatus has traditionally given an alarm to an operator of the apparatus with beeps on communication ~~facilities~~ arrangements, a section for managing the apparatus itself or the like if the apparatus suffers from an error or an unfavorable condition. Moreover, the occurrence of an abnormal condition like an error is reported to a manufacturer or a supplier of the apparatus, an enterprise of diagnosing or operating the apparatus, or an enterprise of supplying such services. In response to the alarm, the operator or engineer of the apparatus searches the information on the abnormal condition reported thereto, checks for the apparatus, and repairs it if possible.

A1

Page 2, please amend the paragraph beginning at line 24 as follows:

Further, in the apparatus installed place, these skilled persons have difficulty in properly responding to the abnormality, because when they come to the place, at least the time taken in moving them from their place to the apparatus installed place is passed so that the state of the apparatus cannot be precisely determined. Further, the skilled persons also have difficulty in reporting the detailed state of the apparatus to the section in charge of designing or manufacturing the apparatus through the communication ~~facility~~ arrangement. The rough, that is, often inaccurate information on the state of the apparatus does not easily allow the approximate response to the abnormality to be provided to the skilled persons located nearby the apparatus.

A2

Page 3, please amend the paragraphs beginning at lines 11 and 25 as follows:

In order to overcome these difficulties, the concerned technology has been devised wherein the information on an abnormality like an error, a failure or a trouble occurring in the apparatus is reported from the apparatus side through a

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communication ~~facility~~ arrangement located therebetween and the proper response to the abnormality is reported back to the apparatus side. This type of technology is disclosed in JP-A-7-282146 (First Prior Art) or JP-A-10-21079 (Second Prior Art). These prior arts are arranged to report the information of an abnormality like an error and to report back the measures determined on the information through a network like a LAN (Local Area Network) served as the communicating ~~facility~~ arrangement.

The first prior art (JP-A-7-282146) is arranged to detect an operating timing of each unit inside the apparatus through the use of a detector like a wafer sensor or a pitch sensor, determine an abnormality occurs if the detected timing is out of the allowable range, and then report an alarm to a computer for managing the apparatus. Further, the computer is connected to a workstation through the communicating ~~facility~~ arrangement (network), the workstation having an expert system operated thereon. In response to an alarm including the number and the abnormality code of an I/O where the abnormality is detected, the expert system operates to transmit the specific method of responding to the malfunctional portion to the computer of managing the apparatus as the diagnosed result and then display the pairs of the failure candidates and the responding methods thereto on the display unit.

Page 5, please amend the paragraph beginning at line 1 as follows:

The foregoing prior arts are both arranged to connect the semiconductor manufacturing apparatus with a computer for diagnosing this apparatus for an abnormality through the communicating ~~facility~~ arrangement (LAN) and report the abnormality through the communicating ~~facility~~ arrangement if it occurs. Then, this computer operates to analyze the cause of the abnormality and its concerned portion, operate the measures for the abnormality, and selectively outputting the measures. This diagnosed result is transmitted to the display unit or the semiconductor manufacturing apparatus on the side of which it is displayed on the display unit.

Page 13, please amend the paragraph beginning at line 27 as follows:

A reference number 100 denotes a semiconductor manufacturing apparatus according to the embodiment of the invention, which includes a main unit 101, an apparatus control microcomputer 102 served as a control unit for this apparatus and being connected with the main unit 101, and an operation terminal (such as a computer or a personal computer or a workstation etc.) 103 served as facility for inputting commands for the operation of the main unit ~~100~~ 101 and being connected with the microcomputer 102 through a communicating ~~facility~~ arrangement. The place in which the semiconductor manufacturing apparatus ~~111~~ 100 is to be installed is, for example, a clean room ~~104~~ 105 located in a business office (factory) 110.

Page 14, please amend the paragraph beginning at line 14 as follows:

In the clean room 105 is located the apparatus operating terminal 103 that is one of servers of an operating system of the semiconductor manufacturing apparatus. The apparatus operating terminal 103 is connected with an operation recording (log) terminal 104 served as saving the recording information of the operation executed by the client apparatus through a communicating ~~facility 111b~~ arrangement 111a served as doing communications according to a communication protocol like TCP/IP. ~~In this connecting arrangement, the~~ The apparatus operation recording terminal 104 is served to receive the information of the operation of the apparatus sent from the terminal 103 and then to record the information in a recording unit built therein (though it is not disclosed). The information of this operation includes an operation having been executed by the apparatus, an output of a sensor located in the apparatus, a transfer of information or commands inside of the apparatus or between the inside and the outside thereof, the information on the process or the routine having been executed by the apparatus, and the time when they take place, all of which are stored in a related manner. For example, the output of the sensor is related with the time information so that the output of the sensor may

be picked up as the time series data. In place, plural kinds of data items to be intended by the user are combined with one another for composing one data and may be displayed as a graph when these data items are stored. These kinds of information are saved as a log of the apparatus.

Page 15, please amend the paragraph beginning at line 16 as follows:

In this embodiment, while the apparatus is in operation, the information of the main unit 101 is continuously obtained, communicated and stored at predetermined intervals. The unit for saving and recording the operation log of the apparatus may be not only the terminal 104 for recording the operation of this apparatus but also the apparatus operating terminal 103 that is a part of the semiconductor manufacturing apparatus or a recording medium like a magnetic disk or a magnetic tape located in the apparatus. The operation recording terminal 104 of the apparatus is provided to be connected with a communicating ~~facility 111c~~ arrangement 111b like an LAN (Intra-net) distributed in the factory 110 so that the terminal 104 may be communicated with a remote diagnosing terminal 107 that is located in a place (for example, an office of a maintenance, repair section of an enterprise that is a user of the apparatus) located remotely from the factory.

Page 16, please amend the paragraph beginning at lines 7 and 20 as follows:

Further, this remote diagnosing terminal 107, the microcomputer 103 for controlling the semiconductor manufacturing apparatus, and the operating terminal 103 are connected with a communicating ~~facility~~ arrangement like a wide area network (WAN) through the communicating ~~facility~~ arrangements 111a, 111b, ~~and~~ 111c and 111d. Throughout the network having these components connected therewith like the wide area communication network 112, the semiconductor manufacturing apparatus is manufactured and then supplied to the buyer (or user) enterprise. The remote diagnosing terminal 107 may be communicated with a

remote diagnosing terminal 114 for the supplier located in an office 113 on the side of the apparatus supplier.

As described above, the semiconductor manufacturing apparatus or its operating system according to this embodiment of the invention includes the communicating ~~facilities 111,~~ arrangements 111a, 111b and network 112 and terminal operating units 102, 103, 104, 107, 114 connected with one another by these communicating ~~facilities~~ arrangements and networks and located remotely from the apparatus. The apparatus or its operating system enables to transfer information between the terminal operating units through the communicating ~~facility~~ arrangements and network so that the user located remotely from the apparatus may issue the information on the state or the abnormality of the apparatus or the commands to the apparatus or receive them by communication~~, facility~~ arrangement.

Page 17, please amend the paragraph beginning at line 25 as follows:

The personnel in charge of maintaining the apparatus located in the factory 110 that is the user of the apparatus receives the operation information of the apparatus saved in the apparatus operation recording terminal 104 through a LAN (such as, Intra-net) served as the communicating ~~facility 111c~~ arrangement 111b according to the TCP/IP protocol or NetBUEI protocol in an FTP or file sharing mode and saves it in the remote diagnosing terminal 107. The information is recorded and saved on the recording medium such as a memory or a magnetic disk. As noted above, the information recorded on the recording medium of the operation recording terminal 104 includes as the operation information of the apparatus the state of an I/O unit of the apparatus, the state of a cassette for accommodating a semiconductor wafer, located in the apparatus, errors, and events taking place in the apparatus. The saving place may be a recording unit with a removable medium such as a flash memory, a small-sized magnetic disk or a removable disk.

Page 28, please amend the paragraph beginning at line 22 as follows:

The remote monitor software for diagnosing the apparatus at a remote location, as shown in Fig. 9, has a function of displaying a screen for showing each operation (event) of the apparatus shown in Fig. 6, a graph screen of the sensor outputs of the apparatus shown in Fig. 7, and the screen for displaying the I/O states shown in Fig. 8 on the screen shown in Fig. 2 at a time. It also has a function of A10 erasing, minimizing or hiding an unnecessary screen behind the screen. These functions allow the informations displayed on the plural screens to be cited on the same screen and the operation of the apparatus to be evaluated or studied as comparing the change taking place as the same or different log files are being read or the operation is being reproduced. This thus makes it possible to more accurately and quickly determine the cause of the abnormality and the state of the abnormality-caused apparatus. As a result, the informations such as the measures against the cause of the abnormality of the apparatus such as a process routine, a condition change, an operation of the apparatus, and a maintenance routine may be notified to the personnel in charge of operating the apparatus or maintaining the apparatus through the communicating ~~facility~~ arrangements and network.

Page 29, please amend the paragraph beginning at line 28 as follows:

In the foregoing description, the remote monitor software has been used in the case that in the factory site where the semiconductor manufacturing apparatus is installed, the apparatus installed place (like a clean room) is remote from the personnel in charge of checking and determining the state and the cause of the A11 apparatus (who is at the office). This case holds true to the case that the place where the personnel in charge of maintaining and repairing the apparatus is in one building and the place where the apparatus is installed is in another building in the same factory site or the former is on one floor and the latter is on another floor in the same building. The function and the effect of the semiconductor manufacturing apparatus or the operating system according to the forgoing embodiment may be effective even in the case that the place where the personnel in charge of

maintaining the apparatus or determining the cause of the abnormality and taking the measures against it, for example, the office of the enterprise of supplying and installing the apparatus or maintaining the apparatus is located out of and far away from the factory ~~side~~ site where the apparatus is installed so that a considerably long time is taken between both of the places but the terminals located in respective places are connected in a wide area network. Hereafter, the description will be oriented to the use of the operating system by the supplier with reference to Fig. 1.

Page 30, please amend the paragraph beginning at line 28 as follows:

In a case that the manufacturer or the supplier of the semiconductor manufacturing apparatus ~~111~~ 100 is notified of the occurrence of an abnormality such as an error or a malfunction of the apparatus by the factory 110 or the enterprise ~~110~~ where the apparatus is installed or the personnel in charge of managing or maintaining the apparatus or the section or another enterprise in charge of such services, the remote monitor software composing the remote diagnosis operating system is used for determining the state or the cause of the abnormality in the place far away from the apparatus installed place, for example, the office of the supplier or the office in which the personnel in charge is located.

Page 31, please amend the paragraph beginning at line 14 as follows:

For example, the remote diagnosing terminal 114 located on the side of the supplier is communicated with the semiconductor manufacturing apparatus 100 installed in the factory 110 through a wide area network like the internet and an in-site communication ~~facility~~ arrangement 111c so that the terminal 114 may receive the operation record (log file) of the apparatus containing the record of the operation at a time when the abnormality has occurred. The in-site communicating ~~facility~~ arrangement 111c of the apparatus user provides a router 108 for communicating with the wide area network 112. For example, the log file stored or recorded in the storage unit located in the operation recording terminal 104 of the semiconductor

manufacturing apparatus 100 is communicated with the terminal ~~104~~ 114 so as to receive the log file from the terminal 104. The storage unit may be located outside the apparatus 100, for example, in the office 107 of the factory 110 or the remote diagnosis terminal 107 of the apparatus user.

Page 32, please amend the paragraphs beginning at lines 6 and 22 as follows:

In this case, the communication security facility is required to be provided so that the information of the content included in the log file of the apparatus is not made open to the third party. Between the wide area communication network 112 and the in-site communication ~~facility~~ arrangement 111c of the apparatus user or the in-office communication ~~facility~~ arrangement 111d of the apparatus supplier is located means of restricting the communication between the outside and the inside of the factory 110 or the office 106 such as a firewall 109. Since the wide area communication network like the internet is a public network, the security has to be secured by the VPN (Virtual Private Network), for example. Instead, the information itself may be encrypted by means of the public key encrypting system or the common key encrypting system.

Moreover, the operation record of the semiconductor manufacturing apparatus 100 is recorded in the specific terminal and the storage unit provided to be communicated therewith so that the terminals 103, 104 and 107 in the factory 110 or the office 106 on the side of the apparatus user may receive and view or display the apparatus log file through the communication ~~facilities 111 and 112~~ arrangements and network. In this case, for restricting the public view of the information in the log file, it is possible to adopt the technology for securing the foregoing security. Moreover, the terminal for recording the operation of the apparatus is provided in the office 113 on the side of the apparatus supplier so that the operation record stored in the storage unit of the terminal 104 by which operation of the apparatus is directly recorded in a short period on the side of the apparatus user may be received at

predetermined intervals for the purpose of allowing the terminal ~~103~~ 114 of the apparatus supplier to store the substantially same operation record as the terminal 104 of the apparatus user. Likewise, the information on the cause of the abnormality and the measures against it may be stored in the specific terminal or the storage unit to be communicated therewith so that the information may be viewed on the terminal.

Page 34, please amend the paragraph beginning at line 9 as follows:

Moreover, the semiconductor manufacturing apparatus and the operating system may be also arranged to store the record of the operation of the log file of a plurality of semiconductor manufacturing apparatuses and share the relation among the state of the abnormality and the determined cause and state or the information on the measures against it among these semiconductor manufacturing apparatuses or to distribute the information among a plurality of apparatus users through the communication ~~facility~~ arrangements and network.